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Drug-Induced Nutrient Depletion

Rodney Richmond
Harding University College of Pharmacy, rrichmond@harding.edu

Over the Counter

Rodney G. Richmond, RPh, MS, CGP, FASCP
Harding University College of Pharmacy

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SCRIPT YOUR FUTURE

By Floyd Moon, PharmD Candidate and Rodney G. Richmond, RPh, MS, CGP, FASCP

IT MAY SOUND OMINOUS, but drug-induced nutrient depletion simply describes an unintended effect that some medications can have on the levels of essential vitamins and minerals necessary for your body to function properly. Drug-induced nutrient depletion occurs more commonly than you might expect. Statistics show that almost 50% of adults in the U.S. take at least one prescription drug, and 20% take three or more. Medications are important and can help improve and maintain our health—they can even be life-saving in some cases. However, there are side effects to medications like drug-induced nutrient depletion, and being aware of these side effects and how to deal with them can maximize your health. Following are some common examples of drug-induced nutrient depletion.

ANTACIDS like calcium carbonate and **ACID BLOCKERS** such ranitidine, omeprazole and others work by reducing acidity in the stomach. However, vitamin B12, folic acid, iron, and zinc require an acidic environment to be absorbed from food. These anti-acid medications may help us feel better after a spicy meal, but we may not be getting all the nutrients we need from our food. Where appropriate, we should use strategies to reduce or eliminate the need for acid blocking medications; however, for people who routinely need to use these drugs, supplementation with select vitamins or minerals may be necessary.

BETA-BLOCKERS is a class of drugs that are commonly used to lower blood pressure and decrease heart rate, both of which are important effects in treating hypertension or an irregular heart rhythm. However, beta-blockers also reportedly interfere with the production of an essential enzyme called coenzyme Q10 (CoQ10). Muscle cells, including heart muscle, need CoQ10 to function properly. Taking 100 to 300 mg of CoQ10 daily with a fat-containing meal can help offset these losses. Beta-blockers can also cause a drop in melatonin, a hormone that helps control your sleep and wake cycles. Judicious use of melatonin 3 mg at bedtime can help alleviate sleep disturbances caused by beta-blockers.

DIURETICS are another class of medications that are used to lower blood pressure. Diuretics work by increasing urine production with resultant fluid loss which decreases blood pressure. However, this process frequently causes important minerals such as potassium, magnesium, and zinc to be flushed out too. Some vitamins that are lost with diuretics include thiamine, vitamin B6, and vitamin C. Since the loss of certain vitamins or minerals can vary with the different types of diuretics, ask your doctor or pharmacist which supplement would be right for you.

Type 2 diabetes has been on the rise for several years and unfortunately isn't showing any signs of slowing down. **METFORMIN** is one of the most common medications used to help lower blood sugar by helping your body use insulin more effectively. While metformin works well and can also lower LDL cholesterol and even cause some weight loss, it is also reported to cause a deficiency of folic acid and vitamins B6 and B12.

ORAL CONTRACEPTIVES are the proper name for what is more commonly referred to as "birth control pills". Similar to metformin, birth control medication can also deplete folic acid, vitamins B6 and B12, thiamine, and riboflavin. Ask your pharmacist to recommend a good B-complex supplement to help with this.

STATINS is the most class of drugs used to lower cholesterol. There are a number of brand name drugs but you can recognize them if the generic name ends in –statin. While these drugs can help to significantly lower your cholesterol, there can be unintended consequences. Statins work by blocking the activity of HMG-CoA which is an enzyme that's required to manufacture cholesterol in the body. However, CoQ10, which as previously mentioned is a primary fuel for our muscle cells including heart muscle, requires HMG-CoA for its production. Depletion of CoQ10 can have a negative impact on muscle and heart health. While no specific recommendations or warnings been provided in the U.S., manufacturers of statin drugs in Canada are required to include warnings on patient safety information sheets about the potential for myopathies and impaired cardiac function. As mentioned with beta-blockers above, taking 100-300 mg of CoQ10 daily may help alleviate the decrease in this important enzyme.

The medications that so many of us take on a daily basis in an effort to stay well are important to our health, so you should never stop taking your medication without first talking to your doctor. If you are taking a medication that can negatively affect the levels of vitamins or minerals in your body, talk to your doctor or pharmacist to see whether you need to take a vitamin or mineral supplement. Doing so may help you alleviate side effects and possibly improve your overall health.

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"Believe you ***can***, and you're **halfway there.**"

– Theodore **Roosevelt**